

# Contact Process sulfuric acid

Stage of process	
Raw materials	<ul style="list-style-type: none"> <li>Sulfur or a sulfide ore</li> <li>Oxygen from the air</li> <li>Water</li> </ul>
Catalysed equation <b>Vanadium (V) oxide</b> $V_2O_5$	<ul style="list-style-type: none"> <li><math>2SO_{2(g)} + O_{2(g)} \rightleftharpoons 2SO_{3(g)}</math></li> <li>Physical conditions required: atmospheric pressure and high temperature 350-450°C</li> </ul>
Process to convert raw materials into reactants	<ul style="list-style-type: none"> <li>Sulfur can be burnt in air  <math display="block">S_{(s)} + O_{2(g)} \rightarrow SO_{2(g)}</math> </li> <li>or</li> <li>Sulfide ore can be burnt in air  <math display="block">2ZnS_{(s)} + 3O_{2(g)} \rightarrow 2ZnO_{(s)} + 3SO_{2(g)}</math> </li> </ul>
Getting product – $H_2SO_{4(l)}$	<ul style="list-style-type: none"> <li><math>SO_{3(g)} + H_2SO_{4(l)} \rightarrow H_2S_2O_7(l)</math></li> <li><math>H_2S_2O_7(l) + H_2O(l) \rightarrow 2H_2SO_{4(l)}</math></li> </ul>
$H_2SO_{4(l)}$ is used for...	<ul style="list-style-type: none"> <li>To make fertilizers such <math>(NH_4)_2SO_4</math> and superphosphate</li> <li>To make synthetic fibre</li> <li>In water (aqueous) solution as a cleaning agent</li> <li>To clean metal surfaces before plating and painting</li> <li>In car batteries</li> </ul>

